

## REMARKS

Claims 1-32 are pending in the present application. Claims In the Office Action mailed on May 8, 2006, the Examiner took the following action: (1) rejected claims 1-2 and 5 under 35 U.S.C. §102(b) as being anticipated by Shirosaka (U.S. 4,988,963); (2) rejected claims 1-3, 5-6, 9-15, and 28-32 under 35 U.S.C. 102(b) as being anticipated by Watanabe (U.S. 5,557,290); (3) rejected claims 4 and 7 under 35 U.S.C. 103(a) as unpatentable over Shirosaka; (4) rejected claims 4, 7, 8, 16 and 17 under 35 U.S.C. 103(a) as unpatentable over Watanabe; (5) rejected claims 9-15 and 28-32 under 35 U.S.C. 103(a) as unpatentable over Shirosaka in view of Watanabe; and (6) rejected claims 18 and 21-27 under 35 U.S.C. 103(a) as unpatentable over Alford in view of Watanabe. Applicant hereby amends claims 1, 2, 7, 9, 18, and 28-32. Claims 10-13 and 21-24 are canceled. Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and the following remarks.

### *I. Claim Objections*

The Examiner objected to claims 19 and 20. Claims 19 and 20 depend from claim 18. However, the Examiner did not specifically state any basis for the objections. Respectfully, applicant assumes that claims 19 and 20 are objected to as being dependent from a rejected base claim, but would be allowable if re-written in independent form including all the limitations of the base claim and any other intervening claims. Nevertheless, applicant has elected to amend claim 18.

### *II. Rejections under 35 U.S.C. §102(a)*

Claims 1-2 and 5 are rejected under 35 U.S.C. §102(b) as being anticipated by Shirosaka; and claims 1-3, 5-6 9-15 and 28-32 are rejected under 35 U.S.C. §102(b) as being anticipated by

Watanabe. Respectfully, applicant traverses the rejections, and submits the claims are allowable over the references cited for the reasons explained in detail below.

Shirosaka (U.S. 4,988,963)

Shirosaka teaches a high frequency coaxial line coupling device that is insertable along the length of a coaxial line. (1:6-10). The device comprises a pair of coaxial lines, and each coaxial line is provided with a spiral electrode element having its central end connected to the end of the coaxial line. (2:12-18). The two electrode elements are rotatable about a common axis of the coaxial lines. (2:18-23).

Watanabe (U.S. 5,557,290)

Watanabe teaches a coupling apparatus for connecting coaxial cables. (1:10-12). The apparatus allows coaxial cables originating from two high frequency apparatuses to substantially connect to each other, where the high frequency apparatuses are provided inside and outside a closed space, without opening a hole or a gap into a wall, door or glass plate. (1:12-16). The coupling apparatus also further allows the transmission and reception of electric energy between an antenna and a coaxial cable. (1:16-19).

Claim 1-3, 5-6

Claim 2-3 and 5-6 depends from claim 1. Claim 1, as amended, recites a communications system, comprising: a connector module including: a first member having at least one first conductive lead disposed therein and a dielectric portion coupled to an end portion of the at least one first conductive lead; and a second member having at least one second conductive lead disposed therein, the first and second members being coupled such that respective end portions of the first and second conductive leads are operatively positioned and spaced apart by the dielectric portion, the dielectric portion being adapted to capacitively couple the respective end

portions of the first and second conductive leads and to allow signals to be transmitted therethrough; a transmitter module including a transmitter, wherein the transmitter module is disposed between a common ground and the connector module; a receiver module including a receiver, wherein the receiver module is disposed between the common ground and the connector module, wherein the transmitter module, the receiver module, and the common ground are configured to allow ground return between the transmitter and the receiver, and wherein at least one of the transmitter module and receiver module is electrically coupled to one of the at least one first conductive lead and the at least one second conductive lead.

Applicant respectfully asserts that the communications system, as recited in amended claim 1, is patentable over the cited references (Shirosaka, Watanabe) for at least the following reasons. With respect to the references cited to Shirosaka, applicant respectfully submits that Shirosaka does not teach a communications system, comprising: "a transmitter module including a transmitter, wherein the transmitter module is disposed between a common ground and the connector module; a receiver module including a receiver, wherein the receiver module is disposed between the common ground and the connector module, *wherein the transmitter module, the receiver module, and the common ground are configured to allow ground return between the transmitter and the receiver*, and wherein at least one of the transmitter module and receiver module is electrically coupled to one of the at least one first conductive lead and the at least one second conductive lead." (emphasis added).

Instead, Shirosaka only teaches a coaxial cable coupling device for coupling either a satellite broadcast antenna to a transmitter, or a satellite reception antenna to a receiver. (2:12-23). Thus, Shirosaka does not teach a communications system comprising a separate transmitter module and a separate receiver module, wherein the two *separate* modules rely on a *common ground* to provide ground return *between a separate transmitter and a separate receiver*. Likewise, with respect the references cited to Watanabe, applicant respectfully submits that Watanabe only teaches a coaxial cable coupling apparatus for coupling either (1) transmitter

components inside and outside a closed space, or (2) receiver components inside and outside a closed space. (Figures 2-9, 1:10-19). Therefore, Watanabe also does not teach a separate transmitter module and a separate receiver module relying on a common ground to provide ground return *between the separate transmitter and the separate receiver*.

Accordingly, applicant respectfully submits each of the cited references (Shirosaka, Watanabe), does not teach the electronic system recited in claim 1. Thus, claim 1 is allowable over the cited references. Furthermore, since claims 2-8 depend from claim 1, they are also allowable over the cited references for at least the same reason claim 1 is allowable, as well as for additional limitations recited in those claims.

#### Claims 9-15

Claims 14 and 15 depend from claim 9. Claims 10-13 have been canceled. Claim 9, as amended, recites an electronic system, comprising: a signal lead; a communications module including at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein the transmitter module comprises a transmitter coupled to a first gain, and a first low-pass filter coupled between the first gain and the signal lead, and wherein the receiver module comprises a receiver coupled to a second low-pass filter, and a second gain coupled between the second low-pass filter and the signal lead; and a capacitive coupling module coupled between the data communications module and the signal lead, the capacitive coupling module including a first member having at least one first conductive lead disposed therein and a dielectric portion coupled to an end portion of the at least one first conductive lead; and a second member having at least one second conductive lead disposed therein, the first and second members being coupled such that respective end portions of the first and second conductive leads are operatively positioned and spaced apart by the dielectric portion, the dielectric portion being adapted to capacitively couple the respective end portions of the first and second conductive leads and to allow signals to be at least one of

transmitted and received therethrough. Applicant respectfully asserts that the electronic system, as recited in amended claim 9, is patentable over the cited reference to Watanabe for at least the following reasons.

Specifically, applicant respectfully submits that Watanabe does not teach an electronic system, comprising: “a communications module including at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein the transmitter module comprises a transmitter coupled to a first gain, and a *first low-pass filter* coupled between the first gain and the signal lead, and wherein the receiver module comprises a receiver coupled to a second low-pass filter, and a second gain coupled between the *second low-pass filter* and the signal lead.” (emphasis added). Instead, Watanabe only teaches a coupling apparatus for a transmitter or receiver, where the coupling apparatus is equipped with a *variable matching circuit* 107, not a low-pass filter. (16:20-25). The relevant portion of Watanabe’s specification states, “The variable matching circuit 107 matches the impedance of a portion on the left side of the circuit 107...with an impedance of a portion on the right side of the circuit 107.” (16:59-65).

Moreover, with respect to  $L_1$  and  $L_2$  of variable match circuit 107, the relevant portion of Watanabe’s specification states, “...a variable capacitor  $VC_4$  connected between both ends of the inductance  $L_2$ , and an inductance  $L_1$  connected between the inductance  $L_2$  and the outer electrode 103. (17:7-10). The inductance  $L_2$  *corresponds* to the inductance  $L_{21}$  connected in series to the central electrode as shown in FIG. 3A, while the inductance  $L_1$  *corresponds* to the inductance  $L_{21}$ , connected between the central electrode and outer electrode as shown in FIG. 5A.” (17:10-15).

The specification of Watanabe further teaches that inductance  $L_{21}$  of Figure 3, in conjunction with  $L_{11}$  of Figure 3, “forms a series resonance circuit with a capacitor  $C_{11}$  which is formed by the central electrode 2<sub>1</sub> and 2<sub>2</sub>, so as to negate the capacitor  $C_{11}$ .” (7:65-8:1). In other words,  $L_{21}$  is part of a resonance circuit that counterbalances the capacitance that occurs during a

capacitive coupling, so that impedances across both sides of the coupling may be matched. (7:5-8). This matched impedance creates a *band pass* characteristic that is observable as “extremely reducing a signal attenuation” near a particular resonance frequency. (8:20-25). Therefore, based on the teaching related to inductance  $L_{21}$ , and the teaching that  $L_2$  corresponds to  $L_{21}$ , it is clear that  $L_2$  performs the same function in variable matching circuit 107. As a result,  $L_2$  is not a part of a low-pass filter.

Similarly, the specification of Watanabe also teaches that inductance  $L_{21}$  of Figure 5A, to which  $L_1$  of the variable match circuit 107 corresponds, forms a resonance circuit with  $L_{11}$  and  $C_{11}$ , “so as to negate the capacitance of  $C_{11}$ .” (8:43-36). Therefore, for the same reason as describe for  $L_2$ ,  $L_1$  is part of a resonance circuit, not a part of a low-pass filter. In fact, the specification of Watanabe further teaches that the combination of the resonance circuit of  $L_1$  and the resonance circuit of  $L_2$  constitutes a “composite matching circuit” capable of enabling “a plurality of passing frequency bands” to be transmitted to a pair of the central electrode. (16:65-17:2).

Second, with respect to variable capacitors  $VC_1$ - $VC_4$ , the specification of Watanabe teaches that these capacitors are for “fine regulation.” (17:15-18). The positions of variable capacitors  $VC_1$ - $VC_4$  are set in such a manner as to allow meter 109 to display an optimum value when a required frequency is received. (17:18-24). This value allows a coupling apparatus of Watanabe to be easily adapted to various thicknesses and make up of the dielectric material. (7:26-33). Therefore, it is clear that variable capacitors  $VC_1$ - $VC_4$  are also not parts of a low-pass filter.

In summary, since variable matching circuit 107 of Watanabe is intended to enable a plurality of passing frequency bands to pass through, neither variable matching circuit 107, nor the specific L series and VC components contained in variable matching circuit 107, constitutes a low-pass filter of the electronic system recited in claim 9.

Accordingly, applicant respectfully submits each of the cited reference to Watanabe, does not teach the electronic system recited in claim 9. Thus, claim 9 is allowable over the cited reference to Watanabe. Furthermore, since claims 14-17 depend from claim 9, they are also allowable over the cited reference to Watanabe for at least the same reason claim 9 is allowable, as well as for additional limitations recited in those claims.

#### Claim 28-32

Claims 29-32 depend from claim 28. Claim 28, as amended, recites a method of transmitting signals, comprising: providing a signal lead; providing a communications module including providing at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein providing the transmitter module include providing a transmitter coupled to a first gain, and providing a first low-pass filter coupled between the first gain and the signal lead, and wherein providing the receiver module comprises providing a receiver coupled to a second low-pass filter, and providing a second gain coupled between the second low-pass filter and the signal lead; providing a capacitive coupling module coupled between the data communications module and the signal lead; and capacitively transmitting the data signal between the communications module and the signal lead. Applicant respectfully asserts that the method of transmitting signals, as recited in amended claim 28, is patentable over the cited reference to Watanabe for at least the following reason.

Applicant respectfully submits that Watanabe does not teach a method of transmitting signals, comprising: "providing a communications module including providing at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein providing the transmitter module include providing a transmitter coupled to a first gain, and providing a *first low-pass filter* coupled between the first gain and the signal lead, and wherein providing the receiver module comprises providing a receiver coupled to a

*second low-pass filter*, and providing a second gain coupled between the second low-pass filter and the signal lead.” (emphasis added).

Instead, Watanabe only teaches a method of providing a coupling apparatus where the coupling apparatus is equipped with a *variable matching circuit* 107. (16:20-25). The relevant portion of Watanabe’s specification states, “The variable matching circuit 107 matches the impedance of a portion on the left side of the circuit 107...with an impedance of a portion on the right side of the circuit 107.” (16:59-65).

Specifically, first with respect to  $L_1$  and  $L_2$  of variable match circuit 107, the relevant portion of Watanabe’s specification states, “...a variable capacitor  $VC_4$  connected between both ends of the inductance  $L_2$ , and an inductance  $L_1$  connected between the inductance  $L_2$  and the outer electrode 103. (17:7-10). The inductance  $L_2$  *corresponds* to the inductance  $L_{21}$  connected in series to the central electrode as shown in FIG. 3A, while the inductance  $L_1$  *corresponds* to the inductance  $L_{21}'$  connected between the central electrode and outer electrode as shown in FIG. 5A.” (17:10-15).

The specification of Watanabe further teaches that inductance  $L_{21}$  of Figure 3, in conjunction with  $L_{11}$  of Figure 3, “forms a series resonance circuit with a capacitor  $C_{11}$  which is formed by the central electrode 2<sub>1</sub> and 2<sub>2</sub>, so as to negate the capacitor  $C_{11}$ .” (7:65-8:1). In other words,  $L_{21}$  is part of a resonance circuit that counterbalances the capacitance that occurs during a capacitive coupling, so that impedances across both sides of the coupling may be matched. (7:5-8). This matched impedance creates a *band pass* characteristic that is observable as “extremely reducing a signal attenuation” near a particular resonance frequency. (8:20-25). Therefore, based on Watanabe’s teaching related to inductance  $L_{21}$ , and further teaching that  $L_2$  corresponds to  $L_{21}$ ,  $L_2$  performs the same function in variable matching circuit 107. As a result,  $L_2$  is not a part of a low-pass filter.

Similarly, the specification of Watanabe also teaches that inductance  $L_{21}'$  of Figure 5A, to which  $L_1$  of the variable match circuit 107 corresponds, forms a resonance circuit with  $L_{11}'$  and



C<sub>11</sub>, "so as to negate the capacitance of C<sub>11</sub>." (8:43-36). Therefore, for the same reason as describe for L<sub>2</sub>, L<sub>1</sub> is part of a resonance circuit, not a part of a low-pass filter. In fact, the specification of Watanabe further teaches that the combination of the resonance circuit of L<sub>1</sub> and the resonance circuit of L<sub>2</sub> constitutes a "composite matching circuit" capable of enabling "*a plurality of passing frequency bands*" to be transmitted to a pair of the central electrode. (16:65-17:2).

Second, with respect to variable capacitors VC<sub>1</sub>-VC<sub>4</sub>, the specification of Watanabe teaches that these capacitors are for "fine regulation." (17:15-18). The positions of variable capacitors VC<sub>1</sub>-VC<sub>4</sub> are set in such a manner as to allow meter 109 to display an optimum value when a required frequency is received. (17:18-24). This value allows a coupling apparatus of Watanabe to be easily adapted to various thicknesses and make up of the dielectric material.(7:26-33). Therefore, it is clear that variable capacitors VC<sub>1</sub>-VC<sub>4</sub> are also not parts of a low-pass filter.

In summary, since variable matching circuit 107 of Watanabe is intended to enable a plurality of passing frequency bands to pass through, neither variable matching circuit 107, nor the specific L series and VC components contained in variable matching circuit 107, constitutes a method of transmitting signals that comprises providing at least one of a transmitter or receiver module that includes a low-pass filter, as recited in claim 28.

Accordingly, applicant respectfully submits that the cited reference to Watanabe does not teach the method of transmitting signals as recited in claim 28. Thus, claim 28 is allowable over the cited reference to Watanabe. Furthermore, since claims 29-32 depend from claim 28, they are also allowable over the cited reference to Watanabe for at least the same reason claim 28 is allowable, as well as for additional limitations recited in those claims.

### *III. Rejections under 35 U.S.C. §103(a)*

Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as unpatentable over Shirosaka; claims 4, 7, 8, and 16-17 are rejected under 35 U.S.C. 103(a) as unpatentable over Watanabe; claims 9-15 and 28-32 are rejected under 35 U.S.C. 103(a) as unpatentable over Shirosaka in view of Watanabe; and claims 18 and 21-27 are rejected under 35 U.S.C. 103(a) as unpatentable over Alford in view of Watanabe. Respectfully, applicant traverses the rejections, and submits that the claims are allowable over the references cited for the reasons explained in detail below.

The relevant teachings of Shirosaka and Watanabe, and their failure to anticipate Applicant's invention, are described above. Alford fails to remedy the above-noted deficiencies of Shirosaka and Watanabe.

#### Alford (U.S. 3,004,153)

Alford teaches a means and method for selectively connecting a pair of antennas to a transmitter or receiver for the purpose of minimizing the effect of nulls produced by transmission or reception of signals from a single antenna. (1:9-14). The means and method consist of varying the phase of a transmitted or received wave by 180° at a super-sonic rate to overcome the nulls. (1:42-48).

#### Claim 4 and 7-8

Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as unpatentable over Shirosaka. Claims 4 and 7 depend from claim 1. Claim 1, as amended, recites a communications system, comprising: recites a communications system, comprising: a connector module including: a first member having at least one first conductive lead disposed therein and a dielectric portion coupled to an end portion of the at least one first conductive lead; and a second member having at least one second conductive lead disposed therein, the first and second members being coupled

such that respective end portions of the first and second conductive leads are operatively positioned and spaced apart by the dielectric portion, the dielectric portion being adapted to capacitively couple the respective end portions of the first and second conductive leads and to allow signals to be transmitted therethrough; a transmitter module including a transmitter, wherein the transmitter module is disposed between a common ground and the connector module; a receiver module including a receiver, wherein the receiver module is disposed between the common ground and the connector module; wherein the transmitter module, the receiver module, and the common ground are configured to allow ground return between the transmitter and the receiver, and wherein at least one of the transmitter module and receiver module is electrically coupled to one of the at least one first conductive lead and the at least one second conductive lead.

Applicant respectfully asserts that, as described more fully above, Shirosaka does not disclose, teach or fairly suggest every aspect of claim 1. Therefore, claim 1 is not rendered unpatentable by the reference cited to Shirosaka, and thus is allowable. Furthermore, since claims 4 and 7 depend from claim 1, they are also allowable over Shirosaka for the same reason that claim 1 is allowable, as well as for additional limitations recited in those claims.

In addition to claim 8, claims 4 and 7 are also rejected under 35 U.S.C. 103(a) as unpatentable over Watanabe. Applicant respectfully asserts that, as discussed above, Watanabe does not disclose, teach or fairly suggest every aspect of claim 1. Therefore, claim 1 is not rendered unpatentable by the reference cited to Watanabe, and thus is allowable. Furthermore, since claims 4 and 7-8 depend from claim 1, they are also allowable over Watanabe for the same reason that claim 1 is allowable, as well as for additional limitations recited in those claims.

#### Claim 9-17

Claims 9-15 are rejected under 35 U.S.C. 103(a) as unpatentable over Shirosaka in view of Watanabe. Additionally, claims 16-17 are rejected under 35 U.S.C. 103(a) as unpatentable

over Watanabe. Claims 10-17 depend from claim 9. Claim 9, as amended, recites an electronic system, comprising: a signal lead; a communications module including at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein the transmitter module comprises a transmitter coupled to a first gain, and a first low-pass filter coupled between the first gain and the signal lead, and wherein the receiver module comprises a receiver coupled to a second low-pass filter, and a second gain coupled between the second low-pass filter and the signal lead; and a capacitive coupling module coupled between the data communications module and the signal lead, the capacitive coupling module including a first member having at least one first conductive lead disposed therein and a dielectric portion coupled to an end portion of the at least one first conductive lead; and a second member having at least one second conductive lead disposed therein, the first and second members being coupled such that respective end portions of the first and second conductive leads are operatively positioned and spaced apart by the dielectric portion, the dielectric portion being adapted to capacitively couple the respective end portions of the first and second conductive leads and to allow signals to be at least one of transmitted and received therethrough.

First, with respect to claims 9-15, applicant respectfully submits that, as discussed above in the response to the rejection based on 35 U.S.C. §102(a), the reference cited to Watanabe does not disclose, teach or fairly suggest an electronic system, as recited in claim 9, comprising, "a communications module including at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein the transmitter module comprises a transmitter coupled to a first gain, and a *first low-pass filter* coupled between the first gain and the signal lead, and wherein the receiver module comprises a receiver coupled to a second low-pass filter, and a second gain coupled between the *second low-pass filter* and the signal lead." (emphasis added).

Moreover, the deficiencies in the teachings of Watanabe are not remedied by the disclosure, teachings or suggestion of Shirotsuka. Specifically, Shirotsuka merely teaches a coaxial

cable coupling device that connects a satellite transmitter with a broadcast antenna, or a satellite receiver with a reception antenna. (1:12-16). Furthermore, the specification of Shirotsuka actually teaches that its coupling device is for coupling coaxial lines for the specific transmission of *high frequency signals*. (2:10-13). Thus, Shirotsuka actually teaches away from transmitter modules or receiver modules that comprise low-pass filters.

Therefore, Shirotsuka and Watanabe, whether individually or in combination, does not disclose, teach, or fairly suggest every aspect of claim 9. As a result, claim 9 is allowable over the cited references to Shirotsuka and Watanabe. Furthermore, since claims 10-15 depend from claim 9, they are also allowable over the cited references for at least the same reason that claim 9 is allowable, as well as for the additional limitation recited.

Second, with respect to claims 16-17, applicant once again respectfully submits that, as discussed above, the reference cited to Watanabe does not disclose, teach or fairly suggest every aspect of claim 9. Therefore, claim 9 is allowable over Watanabe. Furthermore, since claims 16-17 depend from claim 9, they are also allowable over the Watanabe for at least the same reason that claim 9 is allowable, as well as for additional limitations recited.

#### Claims 18 and 21-27

Claims 18 and 21-27 are rejected under 35 U.S.C. 103(a) as unpatentable over Alford in view of Watanabe. Claims 21-27 depend from claim 18. Claim 18, as amended, teaches an aerospace vehicle, comprising: a fuselage; a propulsion system operatively coupled to the fuselage; and an electronic system disposed within the fuselage and including a signal lead; a communications module including at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein the transmitter module comprises a transmitter coupled to a first gain, and a first low-pass filter coupled between the first gain and the signal lead, and wherein the receiver module comprises a receiver coupled to a second low-pass filter, and a second gain coupled between the second low-pass filter and the

signal lead; and a capacitive coupling module coupled between the data communications module and the signal lead, the capacitive coupling module including first member having at least one first conductive lead disposed therein and a dielectric portion coupled to an end portion of the at least one first conductive lead; and a second member having at least one second conductive lead disposed therein, the first and second members being coupled such that respective end portions of the first and second conductive leads are operatively positioned and spaced apart by the dielectric portion, the dielectric portion being adapted to capacitively couple the respective end portions of the first and second conductive leads and to allow signals to be at least one of transmitted and received therethrough.

Applicant respectfully asserts that Alford does not remedy the absent teachings of Watanabe, and either singly or in combination with Watanabe, does not teach or fairly suggest the aerospace vehicle recited in claim 18. Specifically, Alford does not disclose, teach or fairly suggest an aerospace vehicle comprising, “a communications module including at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein the transmitter module comprises a transmitter coupled to a first gain, and a *first low-pass filter* coupled between the first gain and the signal lead, and wherein the receiver module comprises a receiver coupled to a *second low-pass filter*, and a second gain coupled between the second low-pass filter and the signal lead.” (emphasis added).

Instead, Alford merely teaches a hybrid network 11 for varying the phase of a RF wave transmitted through a secondary aircraft antenna by 180° to alter signal nulls and maxima at a “super-sonic” rate. (1:42-49). This allows Alford to overcome the nulls in the radiation pattern of a first aircraft antenna. (1:49-54). Thus, Alford does not teach an aerospace vehicle, as recited in claim 18, which comprises a communication module or transmitter module that respectively includes a low-pass filter.

Moreover, the deficiencies in the teachings of Alford are not remedied by the disclosure, teachings or suggestion of Watanabe. First, Watanabe does not disclose, teach or fairly suggest an aerospace vehicle comprising a fuselage, a propulsion system operatively coupled to the fuselage. Second, as discussed above in the response to the rejection based on 35 U.S.C. §102(a), Watanabe does not disclose, teach or fairly suggest an electronic system disposed within the fuselage that includes a communication module or transmitter module that respectively includes a low-pass filter. Instead, Watanabe merely teaches a coaxial coupling apparatus that includes a variable matching circuit 107, in which the components constitute resonance circuits that match impedance on the inside of a closed space with impedance on the outside of a closed space. (7:4-8, 16:59-17:24).

Therefore, Alford and Watanabe, whether individually or in combination, does not disclose, teach, or fairly suggest every aspect of claim 18. As a result, claim 18 is allowable over the cited references to Alford and Watanabe. Furthermore, since claims 19-27 depend from claim 18, they are also allowable over the cited references for at least the same reason that claim 18 is allowable, as well as for additional limitations recited.

#### Claims 28-32

Claims 28-32 are rejected under 35 U.S.C. 103(a) as unpatentable over Shirotsuka in view of Watanabe. Claims 29-32 depend from claim 28. Claim 28, as amended, recites a method of transmitting signals, comprising: providing a signal lead; providing a communications module including providing at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein providing the transmitter module include providing a transmitter coupled to a first gain, and providing a first low-pass filter coupled between the first gain and the signal lead, and wherein providing the receiver module comprises providing a receiver coupled to a second low-pass filter, and providing a second gain coupled between the second low-pass filter and the signal lead; providing a capacitive coupling

module coupled between the data communications module and the signal lead; and capacitively transmitting the data signal between the communications module and the signal lead.

Applicant respectfully asserts that, as discussed above, Shirosaka does not disclose, teach or fairly suggest every aspect of the method of transmitting signals recited in claim 18. Specifically, Shirosaka does not disclose, teach or fairly suggest a method of transmitting signals, comprising, "providing a communications module including providing at least one of a transmitter module adapted to transmit a data signal and a receiver module adapted to receive a data signal, wherein providing the transmitter module include providing a transmitter coupled to a first gain, and providing a *first low-pass filter* coupled between the first gain and the signal lead, and wherein providing the receiver module comprises providing a receiver coupled to a *second low-pass filter*, and providing a second gain coupled between the second low-pass filter and the signal lead." (emphasis added).

Instead, as discussed above, Shirosaka merely teaches a method of providing a coaxial cable coupling device that connects a satellite transmitter with a broadcast antenna, or a satellite receiver with a reception antenna. (1:12-16). Further, the specification of Shirosaka actually teaches that its coupling device is for coupling coaxial lines for the specific transmission of *high frequency signals*. (2:10-13). Thus, Shirosaka actually teaches away from providing transmitter modules or receiver modules that comprise low-pass filters.

Moreover, the deficiencies in the teachings of Shirosaka are not remedied by the disclosure, teachings or suggestion of Watanabe. As discussed above, Watanabe does not disclose, teach or fairly suggest a method of transmitting signals that comprises providing a transmitter module or a receiver module that each respectively includes a low-pass filter. Instead, Watanabe merely teaches providing a coaxial coupling apparatus with a variable matching circuit 107. (16:20-25). Further, Watanabe teaches that the variable matching circuit 107, in which the components constitute resonance circuits, merely match impedance on the inside of a closed



space with impedance on the outside of a closed space for the optimal transmission of band pass frequencies. (7:4-8, 16:59-17:24).

Therefore, Shirosaka and Watanabe, whether individually or in combination, does not disclose, teach, or fairly suggest every aspect of claim 28. As a result, claim 28 is allowable over the cited references to Shirosaka and Watanabe. Furthermore, since claims 29-32 depend from claim 28, they are also allowable over the cited references for at least the same reason that claim 28 is allowable, as well as for additional limitations recited.

### CONCLUSION

Applicant respectfully submits that pending claims 1-9, 14-20, and 25-32 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully Submitted,

Dated: Aug. 29, 2006

By: Dale C. Barr

Dale C. Barr  
Lee & Hayes, PLLC  
Reg. No. 40,498  
(206) 315-7916